

FINAL FORMER MARINE CORPS AIR STATION (MCAS) TUSTIN Base Realignment and Closure (BRAC) Cleanup Team (BCT)



27 April 2017 Meeting Summary

Meeting Location: Amec Foster Wheeler, Irvine, California **Meeting Date/Time:** 27 April 2016 / 2:00 PM to 3:10 PM

Meeting Summary Prepared by: Tony Guiang, Accord MACTEC 8A JV (AM8AJV)

Meeting Attendees:

Navy: Agencies: Others: Ken Piguee, City of Tustin (City) Jim Sullivan (Base Patricia Hannon, Regional Water Quality Control Board, Santa Ana Region Environmental Tony Guiang, AM8AJV Coordinator [BEC]) (RWQCB) Kurt Myers, Multimedia *Daniel Cordero, Department of Toxic **Environmental Compliance Group** *Content Arnold Substances Control (DTSC) (Lead Remedial (MMEC Group) Project Manager *Mary Aycock (United States Environmental Katy Robinson, MMEC Group Eric Peirce, Tetra Tech Protection Agency [U.S. EPA]) [RPM]) *Guy Chammas *Mike Cruz, Tetra Tech (RPM) *Christine York, MMEC Group *Rich Pribyl (Project Manager [PM])

Attachments:

Alex Bollweg (PM)
*Attended via teleconference

- 1. Update: Soil Vapor Intrusion (VI) Remedial Design Supplemental Assessment Carve Outs (COs) 5 and 6, Former Marine Corps Air Station (MCAS) Tustin
- 2. Former MCAS Tustin, California. BCT Update. April 27, 2017. Operable Unit (OU)-1A and -1B Groundwater Hydraulic Containment Remedy
- 3. Operable Unit (OU)-3 Installation Restoration Program (IRP) Site 1, Former MCAS Tustin, Tustin, California
- 4. Former MCAS Tustin 4/27/2017. Documents Submitted

ACTION ITEMS

Navy will follow up with the Water Board on any information on Neighborhood E and the single detected concentration of benzene in groundwater at Neighborhood D South.

Navy will provide BCT members with an updated schedule (Site Management Plan [SMP]) based on the concurred-upon new delivery date of the Draft 2016 Annual Performance Evaluation Report for OU-1A and OU-1B.

Navy will provide BCT with an update on the status of the VI Tech Memo and VI Supplemental Assessment reports for CO-5 and CO-6, OU-1A and OU-1B.

INTRODUCTIONS AND AGENDA REVIEW

Mr. Jim Sullivan, Navy BRAC Environmental Coordinator (BEC), opened the meeting with self-introductions. A total of 15 people attended the meeting, including Ms. Mary Aycock (U.S. EPA), Mr. Daniel Cordero (DTSC), Ms. Content Arnold (Navy), Mr. Rich Pribyl (Navy), Mr. Guy Chammas

FINAL FORMER MCAS TUSTIN BCT MEETING SUMMARY (27 April 2017) Document Control Number: AM8A-0814-0035-0095

(Navy), Mr. Mike Cruz (Tetra Tech), and Ms. Christine York (MMEC Group), who attended via teleconference.

<u>Update: Soil Vapor Intrusion (VI) Remedial Design Supplemental Assessment – Carve Outs (COs)</u> 5 and 6, Former Marine Corps Air Station (MCAS) Tustin (Presented by Mr. Rich Pribyl, Navy RPM) (Attachment 1)

Slide 1 – Presentation title.

Mr. Pribyl stated that Mr. Eric Peirce (Tetra Tech) is his primary contact in the field and on the phone is Mike Cruz (Tetra Tech PM).

Slide 2 – Presentation Overview.

Mr. Pribyl stated he would review the objectives for the project and present the results of the investigation to date.

Slide 3 – Background – Source Areas, COCs, and Remediation – Carve-Out 5.

The slide includes a figure showing sites included in Carve-Out 5. He explained that OU-1A is a mix of contaminants, specifically 1,2,3-trichloropropane (TCP), represented by the larger green plume in the figure, and trichloroethene (TCE), represented by the smaller plume in the figure. Mr. Pribyl explained that the remedies (groundwater extraction focusing on hydraulic containment) selected for OU-1A and -1B North are similar. At both OUs the Navy conducts performance monitoring and implements institutional controls (ICs) to prevent the domestic use of groundwater. The only difference between the two OUs are the types of contaminants being treated. He noted that 1,2,3-TCP is not present in OU-1B North.

Mr. Pribyl explained that when the team was approaching this project and developing objectives, one question that was asked was with regard to what soil gas screening levels to use to achieve data quality objectives (DQOs). Mr. Pribyl stated that the team, in cooperation with DTSC, developed conservative soil gas screening levels, which ultimately corresponded with the groundwater removal action goals used at the sites. The groundwater remedial action goals were then selected to help define the initial soil gas investigation areas. As a result, Mr. Pribyl stated that there were some groundwater concentrations within the Mingled Plumes Area (MPA) that fall within the DQOs. Therefore, in order to be complete the assessment on CO-5, the MPA was brought into the assessment for consistency. Concentrations at the MPA are lower than the other plume areas, and the primary contaminant is TCE. In situ bioremediation (ISB) was performed at the MPA, and it is now undergoing monitored natural attenuation (MNA) with ICs.

Mr. Pribyl noted that there is no further action for soil in CO-5 (i.e., OU-1A, OU-1B North, MPA).

Slide 4 – Background – Source Areas, COCs, and Remediation – CO-6.

The figure shows the sites included in CO-6. Mr. Pribyl described how CO-6 and CO-5 are two of the last COs on the entire base at Former MCAS Tustin. He explained that the remedies at OU-1B South and North are the same. At OU-1B South, the contamination consists of TCE with some higher concentrations of breakdown products. The remedy at OU-1B South is groundwater extraction and hydraulic containment, with performance monitoring and ICs. There is no further action for soil at OU-1B South.

Slide 5 – Background – Institutional Controls (ICs).

Mr. Pribyl stated that the Navy initiated this work to supplement information available at the time the Explanations of Significant Differences (ESDs) were being prepared for OU-1A and -1B. DTSC had made the request to supplement the information at OU-1A and 1B with additional lines of evidence, specifically relating to soil gas, so that protective ICs are applied to appropriate areas. Recommendations stemming from the assessment of the soil gas data will be documented in a land use control (LUC) remedial design (RD).

Slide 6 – Objective of Assessment.

Mr. Pribyl explained that a human health risk assessment will be conducted in those areas where soil gas exceedances are identified and ICs are implemented.

Slide 7- Approach - Soil Gas Assessment.

The initial soil gas assessment areas at CO-5 and CO-6 were defined by groundwater concentrations greater that the respective remedial action goals and included a 100-foot buffer consistent with DTSC vapor intrusion guidance. The vapor intrusion assessment involved analyzing soil gas and sub-slab samples and comparing the results to the screening levels developed in cooperation with DTSC. Defining the relevant groundwater plume extents was important for generating the initial 100-foot buffer. Specific soil gas project action limits (PALs) were developed in collaboration with DTSC for 1,2,3-TCP and TCE and a lower TCE PAL for the sub-slab soil gas samples. (Note: 1,2,3-TCP is not present in any areas with current structures, so a sub-slab PAL was not required.) Four field change justifications were completed to address the soil and groundwater conditions within the investigation area, that affected the fieldwork. Alternative PALs were therefore developed with DTSC to address those issues.

Slide 8 – Carve-Out 5: OU-1A Status, 1,2,3-TCP Plume.

The Figure shows the location and number of soil gas probes installed, number of samples collected, and analytical results compared to PALs. The figure also shows the current extent of the 1,2,3-TCP plume at Carve Out 5 (OU-1A).

Slide 9 – Carve-Out 5: OU-1A Status, 1,2,3-TCP Plume and TCE Plume.

The figure on the slide shows the location and number of soil gas probes installed, number of samples collected, and analytical results compared to PALs. The figure also shows the current extent of the TCE plume at Carve-Out 5 (OU-1A).

Slide 10 – Carve-Out 5: OU-1B North and Mingled Plumes Area Status, TCE Plume.

The figure on the slide shows the location and number of soil gas probes installed, number of samples collected, and analytical results compared to PALs. The figure also shows the current extent of the TCE plumes at Carve-Out 5 (OU-1B North and MPA).

Buildings 28, 30, and 171 were part of a subset of buildings identified by the City of Tustin as having potential re-use value. Building 28A is northwest of the hangar. These buildings were selected from the larger set of structures due to their proximity to the groundwater plumes. All sub-slab samples collected from those buildings had concentrations less than the TCE sub-slab PAL.

Slide 11 – Carve-Out 6: OU-1B South Status, TCE Plume.

The figure on this slide shows the location and number of soil gas probes installed, number of samples collected, and analytical results compared to PALs. The figure also shows the current extent of the TCE plume at Carve-Out 6 (OU-1B South).

Ms. Patricia Hannon (RWQCB) asked what the maximum TCE concentration was reported in the subslab samples at Hangar 2. Mr. Pribyl replied that he would be able to provide her that information once the analytical results are validated.

Mr. Daniel Cordero (DTSC) asked whether any attempt was made to relocate the step-out sample locations where no flow was detected or observed. Mr. Peirce replied that a significant rain event delayed them from relocating the step-out locations. Further, he explained that once the low flow/no flow conditions were observed, it was determined that representative data may not be possible given the groundwater elevation increases due to the heavy rains. For this reason, they were no longer able to reinstall the probes at the same depths.

Mr. Pribyl stated that data validation is currently in progress. He explained that these data would be evaluated to determine whether specific samples that were unattainable have impacted the completion of the data set and the ability to establish protective ICs in the appropriate areas.

Slide 12 – Next Steps.

Mr. Pribyl explained that after the above step is complete, the reporting and documenting phase will follow and will include a Soil Gas Technical Memorandum. The Soil Gas Technical Memorandum will be followed by a Vapor Intrusion Supplemental Assessment, which will include a more detailed analysis and recommendations with respect to ICs. Further, the impacts to ICs with respect to the ESDs will be documented in a LUC RD document.

<u>Former MCAS Tustin, California. BCT Update. April 27, 2017. Operable Unit (OU)-1A and 1B</u> <u>Groundwater Hydraulic Containment Remedy (Presented by Mr. Pribyl, Navy PM) (Attachment 2)</u>

Mr. Pribyl pointed out that the figure on page 3 of the presentation that shows the OU-1A and OU-1B plumes. There is ongoing monitoring at these sites and the system is being continually optimized based on changes in conditions. All sites have received an Operating Properly and Successfully (OPS) designation, and the Orange County Water District permit has been renewed.

Mr. Pribyl provided a brief summary of the OU-1A and OU-1B remedies in place at Former MCAS Tustin.

Mr. Pribyl explained that both systems (OU-1A and OU-1B) were OPS. He provided details regarding the current extraction/treatment rates, total volume groundwater treated through April 21, 2017, and total contaminant mass recovered for both the OU-1A/1B North and OU-1B South systems.

Mr. Pribyl noted some upcoming documents including the Draft 2016 Annual Performance Evaluation (PER) report, currently in Navy review, and scheduled for submittal to the Agencies in May 2017. He noted that the semiannual groundwater monitoring event is scheduled to take place in June 2017.

Operable Unit (OU)-3 Installation Restoration Program (IRP) Site 1, Former MCAS Tustin, Tustin, California (Presented by Mr. Alex Bollweg, Navy PM) (Attachment 2)

Mr. Sullivan explained that the OU-3 presentation would also be given at the Restoration Advisory Board (RAB) presentation this evening.

Slide 1 – Presentation title.

Mr. Bollweg introduced himself as environmental engineering contract support for Navy BRAC and he will be talking about OU-3 (IRP Site 1) at Former MCAS Tustin in Tustin, California.

Slide 2 – Presentation Overview.

Slide 3 – Background – Site Location.

Mr. Bollweg pointed out the location of OU-3 at Former MCAS Tustin.

Slide 4 – Background – OU-3 Site Map.

The figure on this slide shows OU-3 and the current groundwater monitoring well network. Mr. Bollweg stated that the site is composed of the Moffett Trenches, located near the southern end of the site next to Moffett Road, as well as the crash crew burn pits that were located in the central part of the site and going towards the north. He identified site features on the map shown on the slide to include Jamboree Road and Peters Canyon Channel.

Slide 5 – Background – History.

Mr. Bollweg provided a brief background and site history of OU-3. Mr. Bollweg explained that approximately 5,000 cubic yards of material (MCAS Tustin generalized solid industrial waste) was disposed in the landfill trenches. He explained that the firefighting training exercises took place in the crash crew pits at the site where approximately 250,000–300,000 gallons of liquids were burned. Fluids consisted of mainly jet propellant number 5 (JP-5) as well as solvents, lacquers, and various other chemicals. Mr. Bollweg stated in previous sampling events, the primary chemicals of concern at the site have been nondetect.

Slide 6 – Remedy Overview.

Slide 7 – Remedy Overview (continued).

Mr. Bollweg stated that the steel-reinforced concrete containment wall was built in 1986 in response to petroleum seeping into Peters Canyon Channel. Mr. Bollweg stated that five-year reviews were completed in order to determine if new laws or regulations had been put in to place that would compromise the protectiveness of the remedy at the site.

Slide 8 – Remedy Overview (continued).

This slide shows a photograph of the site looking west to east. Mr. Bollweg explained that the fence shown in the photograph around the site was installed to protect the monitoring wells that are used for groundwater monitoring. The photograph also shows the location of Jamboree Road relative to the site. He explained there is a landfill cap over the site that includes 20 feet of fill material.

Slide 9 – Remedy Overview (continued).

This slide shows a photograph of the site looking north from the western side of the site. Jamboree Road is shown behind the wall.

Slide 10 – Monitoring Program.

Mr. Bollweg explained that the last groundwater monitoring event was completed in 2015 and the next event will be in 2020 to coincide with and support the five-year review. Mr. Bollweg added that the annual compliance certifications go along with the annual reports and five-year reviews.

Ms. Hannon requested that the types of events that qualify as significant should be explained. Mr. Bollweg stated that the significant events include earthquakes and significant rainfall.

Slide 11 – Draft 2016 Annual Report.

Mr. Bollweg explained that the conclusions from the Draft OU-3 Long-Term Monitoring (LTM) Report were that the remedies in place at OU-3 continue to be protective of human health and the environment. Engineering control components are functioning as intended, and IC compliance certifications were completed with no issues identified.

Mr. Bollweg informed the attendees that, as a follow-up to the 2016 five-year review, there will be a sampling event conducted to determine the presence or absence of per- and polyfluoroalkyl substances (PFAS) in groundwater at OU-3.

Slide 12 – Groundwater Sampling.

Mr. Bollweg explained that the sampling would consist of a single groundwater sampling event for PFAS. This will include the sampling of one upgradient (monitoring well I00MW43S) and two downgradient wells (I00MW50S and I00MW52S).

Mr. Bollweg elaborated that, while the groundwater at OU-3 is not used for drinking water, the sample results will be screened against the May 2016 U.S. EPA Lifetime Health Advisory for public drinking water. Mr. Bollweg added that the ICs at the site prevent unauthorized exposure to the groundwater.

Mr. Piguee asked whether the Navy would provide background on PFAS at the RAB meeting. Mr. Sullivan replied that a PFAS fact sheet would be available at the RAB meeting for attendees.

Slide 13 – Schedule.

Mr. Bollweg explained that the Work Plan for PFAS sampling of groundwater was sent as a draft to agencies on April 10, 2017, and comments or concurrence was requested in mid-May in time for fieldwork to begin in June 2017. Mr. Bollweg stated that the 2016 Annual LTM Report was issued on April 24, 2017, as a draft to agencies, and a final LTM Report is scheduled for submittal in August 2017.

Mr. Bollweg stated that the groundwater monitoring report for the sampling that will be conducted this summer is expected to be submitted as a draft in fall 2017.

Slides 14 and 15 – Questions and acronyms, respectively.

Mr. Bollweg asked whether there were any questions or comments.

Ms. Hannon stated that on page 5, Mr. Bollweg stated that there were no detections, but she believed that 1,1-dichloroethane (1,1-DCA) was detected. Mr. Bollweg agreed. Ms. Content Arnold stated that Ms. Hannon was correct about the detection, but she did not believe it was above threshold levels.

According to the 2015 Annual Long-Term Monitoring Report, in 2015 1,1-DCA and vinyl chloride were detected in well I001BC50S at 45 ug/L and 0.75 ug/L, respectively. Well I001BC50S is screened in the

upper water bearing zone. These chemicals were not detected above threshold numbers in any of the groundwater monitoring wells screened in the deeper zone.

Former MCAS Tustin 4/27/2017. Documents Submitted

Ms. Content Arnold asked attendees to reference the document review list handout. Ms. Arnold explained that each RPM would discuss the purpose of the documents provided on the list. Ms. Arnold stated that the document due dates are consistent with the SMP, which is a living document. She stated that it was recently reviewed and approved and the next year's SMP would be drafted soon. Ms. Arnold noted one document would require an extension request.

Documents Submitted:

Mr. Guy Chammas introduced himself as the Navy RPM for the OU-4B sites. He explained that OU-4B sites were made up of low concentration sites (LCS) and moderate concentration sites (MCS) for TCE in shallow groundwater. Mr. Chammas explained that the 2016 Annual Institutional Control Compliance Monitoring Report for OU-4B LCS covers groundwater monitoring that was conducted and the IC compliance certificates. He explained that most of the property has already been transferred and the 2016 Annual Institutional Control Compliance Monitoring Report presented results of the groundwater monitoring. Mr. Chammas said there were no comments on the draft and it was submitted as final on April 21, 2017.

Mr. Chammas stated that Finding of Suitability to Transfer (FOST) #9 was also recently submitted to the Agencies. The FOST proves suitability to transfer IRP Sites 5S(a) and 6. Minimal comments were received on the draft and it was finalized in March 2017. Mr. Chammas stated that the Navy was currently working on drafting the Covenants to Restrict Use of Property (CRUPs) that establish any ICs on the property.

Mr. Piguee pointed out that despite the finalization of FOST #9, the City of Tustin still has concerns regarding the transfer and would be drafting correspondence to that effect.

Mr. Bollweg stated that the Well Destruction Report for Groundwater Monitoring Wells at Neighborhood E and OU-3 was issued as final in March 2017. The document reported the destruction of three no further evaluation site wells at Neighborhood E and one well at OU-3 that had a bent casing due to root intrusion. He stated that the wells were destroyed in early March and the destruction report was finalized March 31, 2017.

Mr. Bollweg stated the Work Plan for Groundwater Sampling at OU-3 was submitted as a draft to agencies on April 10, 2017, with the hope to receive comments and have them resolved by May 10, 2017, so that field sampling could be conducted in June. The 2016 Annual LTM Report for OU-3 was issued April 24, 2017, and the Navy is requesting comments/concurrence by June 21, 2017.

Ms. Arnold stated that the well destruction report for Neighborhood E and OU-3 supports and is the final requirement for the no further action (NFA) for Neighborhood E. Ms. Arnold asked the Water Board when their review of that document would be completed and an NFA determination issued. Ms. Hannon replied that in the next couple of weeks she hoped to complete her review and issue concurrence on the NFA. Mr. Piguee asked whether the NFA concurrence would be issued in the form of a letter. Ms. Hannon replied she expected the NFA concurrence to be documented in a notification letter explaining that the documents were reviewed for this site and that Water Board is proposing closure.

Documents Upcoming for Review

Mr. Pribyl stated that the 2016 Annual Performance Evaluation Report for OU-1A and OU-1B was originally scheduled to be submitted as a draft on May 5, 2017, but that an extension to May 19, 2017 will be requested. Mr. Pribyl stated that overall, he thought the annual reports have been getting better over the last few years in its presentation and the amount of detail included. Ms. Arnold asked whether agency concurrence could be received on the two-week extension. Ms. Hannon concurred for the Water Board, Ms. Aycock concurred for the U.S. EPA, and Mr. Cordero concurred for DTSC on the two-week extension for the delivery of the Draft 2016 Annual Performance Evaluation Report for OU-1A and OU-1B. Ms. Arnold stated that Navy would follow up with an updated schedule.

Mr. Chammas discussed the Neighborhood D South Closure Report. He explained that, although this is not a CERCLA site, the Navy has been updating all agencies, despite the site being limited to petroleum impacts. He explained that while City of Tustin excavations were being conducted, residual contamination was discovered. The Navy returned to the site to initiate cleanup. Fieldwork was completed in December 2016. Mr. Chammas noted that the report will be relying on the Low-Threat Case Closure Policy that the State Water Resources Board has promulgated. Mr. Chammas stated that there was one elevated benzene concentration, but that benzene is delineated upgradient and downgradient of that location. Ms. Hannon asked the value for the elevated concentration. Mr. Chammas stated he would find that data, but clarified that it was located in an area where the petroleum-impacted soil was found. Mr. Chammas stated that this work was completed on City property.

Mr. Chammas stated that IRP Site 5S(a), IRP Site 6, and the MPA are addressed in the 2016 Annual Performance Evaluation Report for OU-4B MCS. Mr. Chammas stated that the remedy at these sites is ISB, MNA, and ICs. He noted that the sites are sampled semiannually. ISB injections were performed in 2013 with emulsified vegetable oil and *Dehalococcoides* to promote dechlorination of TCE. The Navy monitors the remedy and recommends any optimizations in the annual reports. The 2016 Annual Performance Evaluation Report for OU-4B MCS is scheduled for delivery as a draft in June 2017.

Mr. Chammas stated that an MPA monitoring well located in Hangar 1 will be destroyed and a final Work Plan for Destruction of Monitoring Well MPMW06S will be issued in June 2017. Mr. Chammas explained that the partial roof collapse at Hangar 1 makes it an unsafe place for groundwater monitoring activities. Furthermore, the detections in the well proposed for destruction have been trace to nondetect over all of the historical sampling events.

Ms. Arnold stated that schedule for the final two documents, the VI Tech Memo for CO-5 and CO-6, OU-1A and OU-1B, and the VI Supplemental Assessment CO-5 and CO-6, OU-1A and OU-1B, will be refined soon and a new schedule provided. Ms. Arnold explained that the Navy is aware of the importance of these documents to the ESDs and LUC RD for those sites.

Ms. Arnold stated that the remainder of the documents would document fieldwork events and that, as always, the agencies are welcome to visit the site at any time by coordinating with the appropriate site RPM.

Ms. Arnold asked whether there were any questions or comments. There were none.

Mr. Sullivan stated that a program status brief would be given at the RAB tonight and consisted of an update to the previous presentation given at the last RAB. The update would provide overall site information and status of forthcoming fieldwork and documentation.

REVIEW ACTION ITEMS/NEXT MEETING

Action Items are provided on Page 1 of this Meeting Summary.

The next in-house BCT Meeting is scheduled for 12 October 2017. Any special topic BCT meetings will be scheduled, as needed.

Mr. Sullivan informed the BCT that the Navy submitted to the agencies a Project Environmental Review Form (PERF) today (April 27, 2017) for roadway and utility improvements within CO-5, which is still Navy-owned property. The process is that the Navy will review a PERF (here submitted by the City of Tustin) and send an approval letter with approval contingent on Federal Facility Site Remediation Agreement (FFSRA) party concurrence; that is, concurrence from U.S. EPA, DTSC, and the Water Board.

Mr. Piguee explained that the improvements covered by the PERF is on property subleased by the City of Tustin to the South Orange County Community College District, which is constructing its first building on the property for the new campus located within CO-5. This project is in support of that construction. The City of Tustin would appreciate an expedited review, if it can be provided. Ms. Aycock stated that the U.S. EPA typically defers to the state for PERFs, but she was not sure whether the City of Tustin needs a letter stating that or not. Mr. Sullivan stated that an email would suffice. Ms. Aycock said she would reply to the email that included the PERF.

There were no further comments or questions.

The meeting was adjourned at 3:10 p.m.



Update: Soil Vapor Intrusion Remedial Design Supplemental Assessment— Carve Outs (CO) 5 and 6 Former Marine Corps Air Station (MCAS) Tustin

Base Realignment and Closure (BRAC) Cleanup Team Meeting Richard Pribyl, Navy Contracted Environmental Engineering Support Eric Pierce, Project Geologist

Presentation Overview



- Background Source Areas, Chemicals of Concern and Remediation
- Background Institutional Controls
- Objective of Assessment
- Approach Soil Gas Assessment
- Assessment Status
- Next Steps

Background –Source Areas, COCs and Remediation – Carve Out 5



•OU-1A

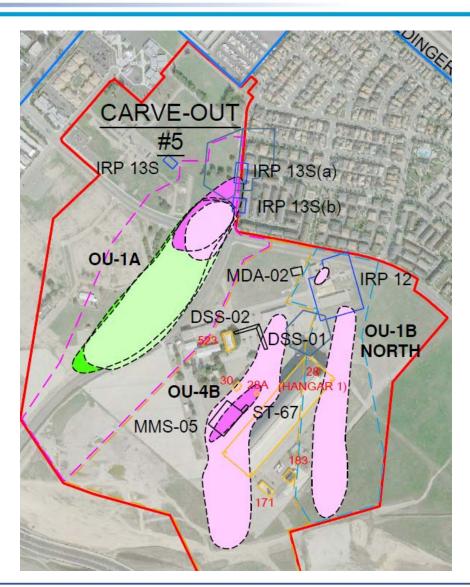
- 1,2,3-TCP, TCE and breakdown products
- Includes: Hot Spot Groundwater
 Extraction and Hydraulic Containment,
 Performance Monitoring, ICs
- No Further Action (NFA) for soil

•OU-1B North

- TCE and breakdown products
- Includes: Hot Spot Groundwater
 Extraction and Hydraulic Containment,
 Performance Monitoring, ICs
- NFA for soil

OU-4B Mingled Plumes Area

- TCE and breakdown products
- Includes Insitu Bioremediation (ISB)
 Performance and Natural Attenuation
 Monitoring, ICs
- NFA for soil

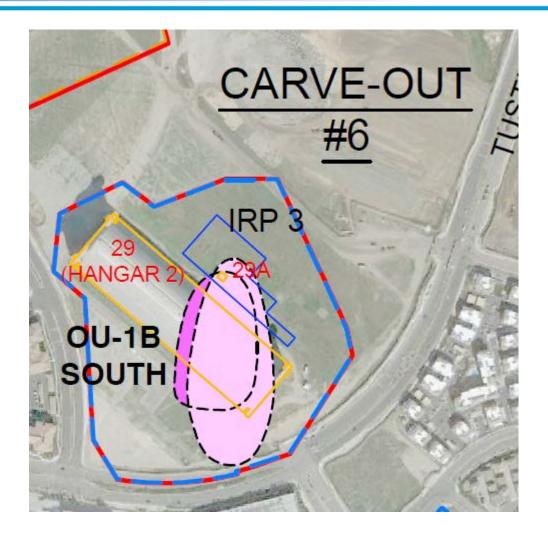


Background –Source Areas, COCs and Remediation – Carve Out 6



•OU-1B South

- TCE and breakdown products
- Includes: Hot Spot Groundwater
 Extraction and Hydraulic
 Containment, Performance
 Monitoring, ICs
- NFA for soil



Background – Institutional Controls (ICs)



- •Establish vapor intrusion (VI) ICs to protect current receptors and future receptors under a variety of possible reuse scenarios.
- The following documents will define these IC's:
 - Explanation of Significant Differences (ESD) to the Final Record of Decision/Remedial Action Plan (ROD/RAP), OU-1A, Former MCAS Tustin, Tustin, California
 - ESD to the Final ROD/RAP, OU-1B, IRP-3-Paint Stripper Disposal Area, IRP-12-Drum Storage Area No. 2, Former MCAS Tustin, Tustin, California
 - Land Use Controls (LUC) Remedial Design (RD) Amendment No. 1, RD
 Hydraulic Containment with Hot Spot Removal, OU-1A & -1B, Former
 MCAS Tustin, Tustin, California

Objective of Assessment



- Assess soil gas concentrations in CO-5 and CO-6
- Compare soil gas and sub-slab gas data to DTSC and USEPA soil gas screening levels (SLs)
- Complete a Human Health Risk Assessment
- Use multiple lines of evidence to support ICs for VI
- Finalize ESDs and LUC RD

Approach – Soil Gas Assessment



- Complete assessment area includes the entirety of CO-5 & CO-6
- Focused assessment areas = [GW] > MCL/RG + perimeter

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-[TCE] in GW = 5 ug/L
-[1,2,3-TCP] in GW = 0.5 ug/L
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- •100' perimeter applied to focused assessment areas
- Collect soil gas and sub-slab soil gas samples and compare with the respective Project Action Limit [PAL]:

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-[1,2,3-TCP] in soil gas = 0.14 ug/m3 -[TCE] in soil gas = 480 ug/m3 -[TCE] in sub-slab soil gas = 9.6 ug/m3
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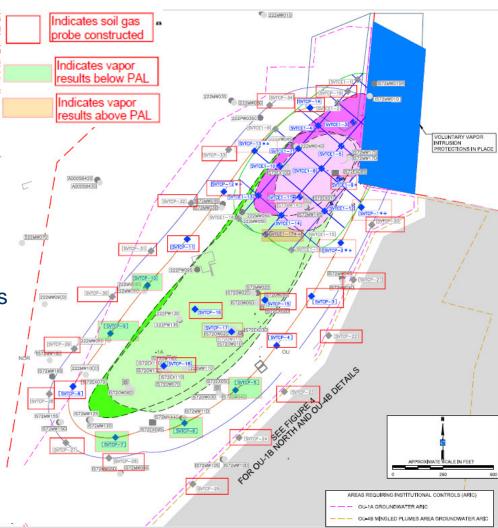
Approach and PALs developed in coordination with DTSC

Carve-Out 5: OU-1A Status 1,2,3-TCP Plume



•1,2,3-TCP Plume

- -37 primary and step-out soil gas probes installed
- –6 primary samples collected
- Samples not collected at 30 locations due to "non-flow" conditions
 - Local geology and significant rains
- One location destroyed in construction
- -[1,2,3-TCP] in soil gas > PAL at 1 probe
- -[1,2,3-TCP] in soil gas < PAL at 5 probes

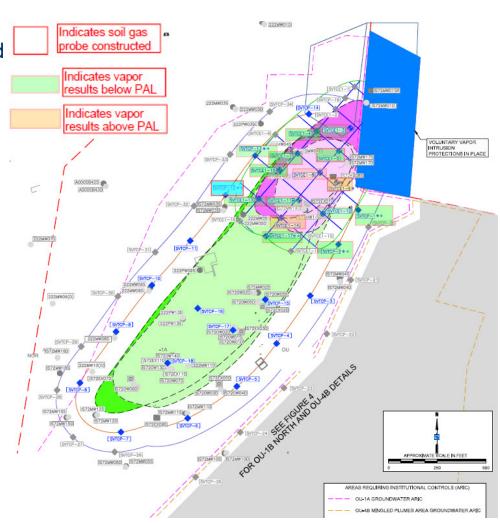


Carve-Out 5: OU-1A Status 1,2,3-TCP Plume and **TCE Plume**



TCE Plume

- -12 primary TCE soil gas probes installed
- -12 primary samples collected
- –No step-out probes required
- -[TCE] in soil gas > PAL at 3 probes



Carve-Out 5: OU-1B North and Mingled Plumes Area Status TCE Plume



OU-1B North

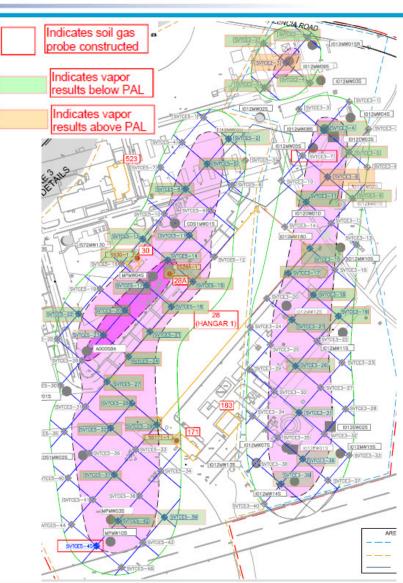
- -13 primary soil gas probes installed
- –7 step-out soil gas probes installed
- Sample not collected from 1 step-out probe, due to "non-flow" conditions
- -[TCE] in soil gas > PAL at 2 probes

Mingled Plumes Area

- -22 primary soil gas probes installed
- -21 probes sampled
- –No step-outs were required
- -All [TCE] in soil gas < PAL

Sub-slab Probes

- –3 sub-slab probes installed/sampled
- Bldgs 28A, 30 & 171: selected for plume proximity and potential reuse
- [TCE] in soil gas < the PAL in all 3 samples</p>



Carve-Out 6: OU-1B **South Status**TCE Plume

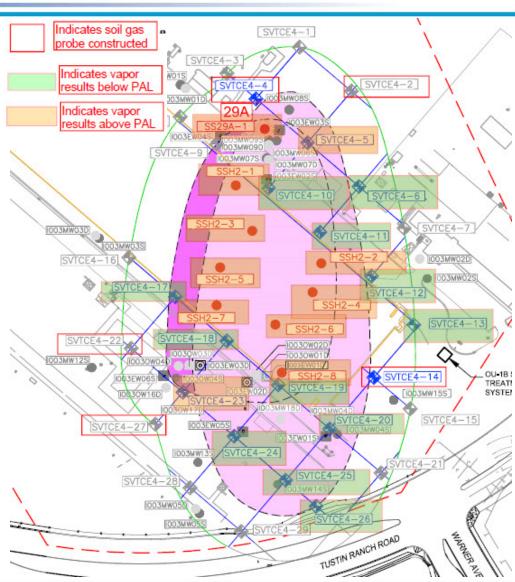


Soil Gas Probes

- -16 primary soil gas probes installed
- –3 step-out soil probes installed
- –Samples collected at 14 primary soil gas probes
- Samples not collected at 2 primary and 3 step-out probes due to "nonflow" conditions
- -[TCE] in soil gas > PAL at 2 probes

Sub-slab Probes

- -9 sub-slab probes installed
- -[TCE] in soil gas > PAL at all 9 subslab probes



Next Steps



- Soil Gas Tech Memorandum
- Soil Vapor Intrusion Supplemental Assessment Report
- •ESD to the Final ROD/RAP, OU-1A
- •ESD to the Final ROD/RAP, OU-1B
- •LUC RD Amendment No. 1, RD Hydraulic Containment with Hot Spot Removal, OU-1A & -1B



Former MCAS Tustin, California BCT Update



April 27, 2017

Operable Unit (OU) -1A and -1B Groundwater Hydraulic Containment Remedy

- Navy is continuing to review and consider options for remedy optimization at Operable Units 1A (IRP-13S) and 1B (IRP-3 and IRP-12).
 - Adjust pumping rates and water level set points
 - Consider redeveloping wells to increase efficiency
 - Monitor potential vertical gradient in paired wells
- Both Systems are Operating Properly and Successfully.
- Renewed OU-1B North Discharge Permit on 2-24-17.

OU-1A/-1B North System

- Current Extraction/Treatment Rate: approximately 19 gpm (4/21/17).
- Total Volume Groundwater Treated (through 4/21/17): 120.409 million gallons.
- Total 1,2,3-TCP/TCE Mass Recovered (through 4/21/17): 6.39 lbs/10.59 lbs.

OU-1B South System

- Current Extraction/Treatment Rate: approximately 11.5 gpm (4/21/17).
- Total Volume Groundwater Treated (through 4/21/17): 48.675 million gallons.
- Total TCE Mass Recovered: (through 4/21/17): 163.07 lbs.

Upcoming Report Schedule Milestones:

- Draft 2016 Annual Performance Evaluation Groundwater Remedy Report May 5, 2017.
- Final 2016 Annual Performance Evaluation Groundwater Remedy Report for OU-1A/-1B August 4, 2017.

Upcoming Field Schedule Milestones:

Semi-Annual Groundwater Monitoring event - June 2017.



Operable Unit (OU)-3 Installation Restoration Program (IRP) Site 1 Former MCAS Tustin, Tustin, California

Restoration Advisory Board (RAB) Meeting, April 27, 2017 Alex Bollweg, Environmental Engineering Contracted Support

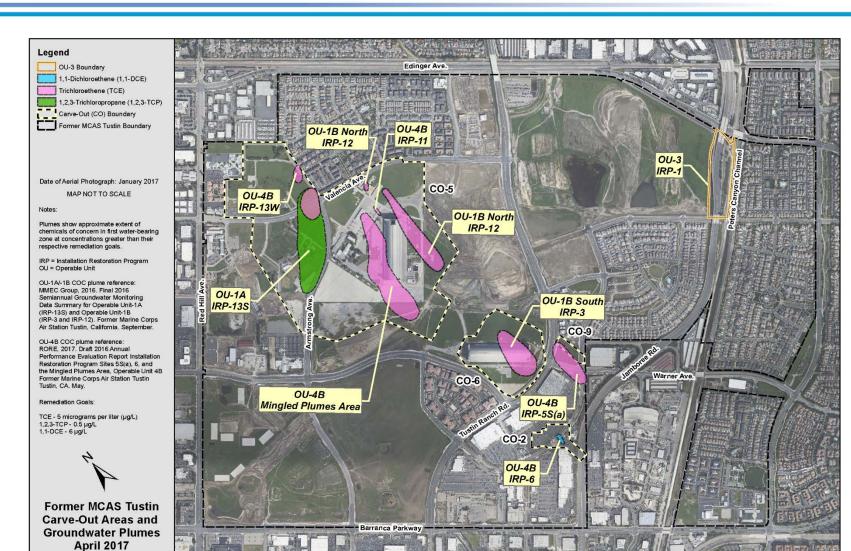
Presentation Overview



- Background
 - -Site Location/Site Map
 - -History
- Remedy Overview
- Monitoring Program
- 2016 Annual Long-Term Monitoring Report
- Groundwater Sampling
- Schedule

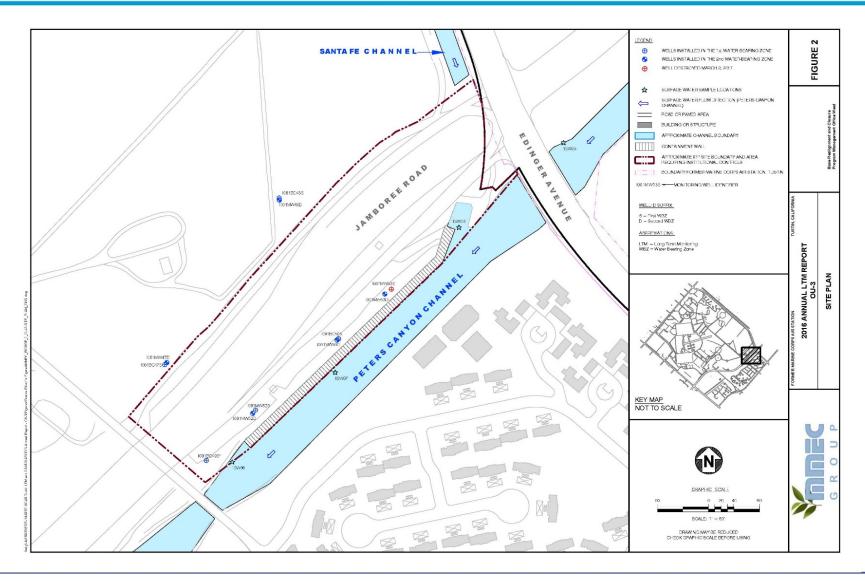
Background – Site Location





Background – OU-3 Site Map





Background - History



- •OU-3 (IRP Site 1): Moffett Trenches and Crash Crew Burn Pits
- Landfill trenches used from late 1940s/early 1950s until about 1971
 - -Approximately 5,000 cubic yards of material
- Fire fighting training exercises from 1971 to 1983
- Primary Chemicals of Concern in Groundwater
 - 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, benzene, chlorobenzene, trichloroethylene, vinyl chloride, and metals (antimony, arsenic, cadmium, manganese, molybdenum, and thallium)



Remedial Action Objectives

- -Control or eliminate the discharge of contaminated groundwater above the remediation goals (RGs) into Peter Canyon Channel that could potentially impact human health or the environment and to preserve existing high-quality surface water.
- Prevent or minimize the downward migration of contaminated groundwater above the RGs into deeper groundwater zones to preserve existing high-quality groundwater.
- Prevent or minimize exposure to contaminated groundwater above the RGs, buried waste, and subsurface soils that have reported contamination above health-based levels.
- -Implement appropriate remedial actions as necessary to facilitate rapid transfer and reuse of the OU-3 property.



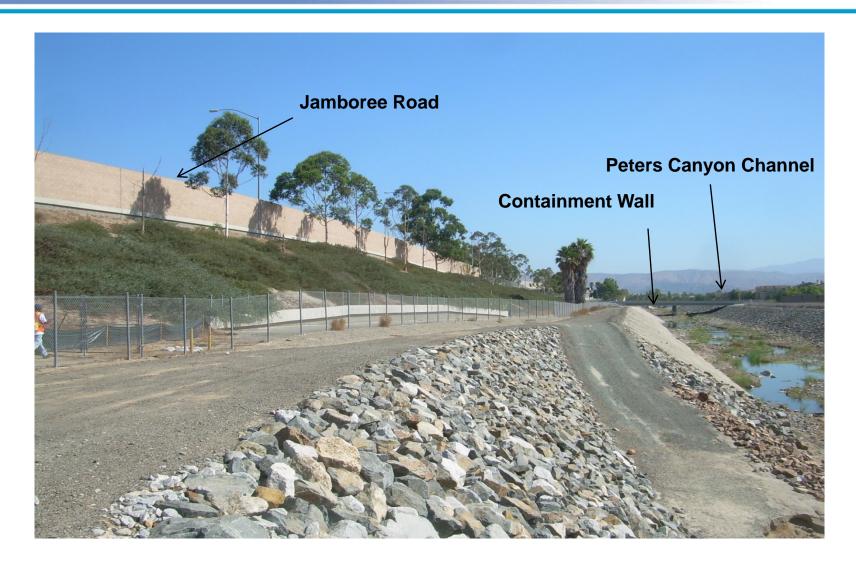
•2001 Final Record of Decision (ROD) Remedy Components

- -Steel-reinforced concrete containment wall
- -Performance monitoring
 - Groundwater
 - Surface water
 - Landfill gas
- -Inspections and Maintenance (if required)
- -Institutional Controls (ICs) which include restrictions to:
 - Prevent unauthorized exposure or use of groundwater
 - Prevent certain activities or uses
 - Protect remedial action equipment
- -Five-Year Reviews









Monitoring Program



- •Conduct in accordance with agency concurred Final Operation and Maintenance Plan and Annual Report recommendations
 - -Groundwater and Surface Water Monitoring
 - Next event will be in 2020
 - Landfill Gas Monitoring
 - Discontinued and probes destroyed in July 2014
 - -Inspections of Engineering Controls (ECs) and ICs
 - Annual or after significant events
 - IC: Annual Compliance Certification
 - -5 Year Reviews

Draft 2016 Annual Report



Conclusions

- -OU-3 continues to be protective of human health and the environment
- -EC components are in good condition and functioning as intended
- -ICs compliance certificates completed with no issues identified
- 2016 Five-Year review Follow-Up Action
 - -Groundwater sampling will be conducted to determine the presence or absence of per- and poly-fluoroalkyl substances (PFAS) in groundwater at OU-3

Groundwater Sampling



- Single Groundwater Sampling Event for PFAS
- Sampling 3 groundwater monitoring wells
 - -1 upgradient (I00MW43S)
 - -2 downgradient (I00MW50S and I00MW52S)
- Screening Levels
 - –May 2016 United States Environmental Protection Agency (U.S. EPA) Lifetime Health Advisory (LHA) levels for public drinking water
 - -Groundwater is not used for drinking water
 - -ICs to prevent unauthorized exposure or use of groundwater

Schedule



Work Plan PFAS Sampling for Groundwater Remedial Action

-Draft: April 10, 2017

–Final: May 2017

Groundwater sampling: June 2017

2016 Annual Long-Term Monitoring Report OU-3 IRP-1

-Draft: April 24, 2017

-Final: August 2017

Groundwater Monitoring Report

-Draft: Fall 2017

Questions





Acronyms



BRAC Base Realignment and Closure

EC engineering control

EPA Environmental Protection Agency

IC institutional control

IRP Installation Restoration Program

LHA Lifetime Health Advisory

LTM long-term monitoring

LUC land use control

OU Operable Unit

RAB Restoration Advisory Board

RG Remediation Goals

ROD Record of Decision

U.S. United States

FORMER MCAS TUSTIN

4/27/2017

		Transmitted to BCT		Comments
DOCUMENTS SUBMITTED		Planned	Actual	Due
Work Plan Destruction of Groundwater Monitoring Wells at Neighborhood E and OU-3	Final		2/14/2017	N/A
2016 Annual Institutional Control Compliance Monitoring Report OU-4B LCS	Final		4/21/2017	N/A
Finding of Suitability to Transfer #9	Final		3/2/2017	N/A
Well Destruction Report Groundwater Monitoring Wells at Neighborhood E and OU-3	Final		3/31/2017	N/A
Work Plan for Groundwater Sampling OU-3	Draft		4/10/2017	5/10/2017
2016 Annual Long-Term Monitoring Reprt OU-3	Draft		4/24/2017	6/21/2017

DOCUMENTS UPCOMING FOR REVIEW

2016 Annual Performance Evaluation Report OU-1A & OU-1B	Draft	5/5/2017	5/19/2017	
Neighborhood D South Closure Report	Draft	6/1/2017		
2016 Annual Performance Evaluation Report OU-4B MCS	Draft	6/1/2017		
VI Tech Memo Carve Out-5 and -6 OU-1A and OU-1B	Draft	TBD		
VI Supplemental Assessment Carve Out-5 and -6 OU-1A and OU-1B	Draft	TBD		

DOCUMENTS UPCOMING - FINAL

Work Plan for Destruction of Monitoring Well MPMW06S (in Hangar 1)	Final	6/1/2017	

FIELDWORK *

OU-1A & OU-1B O&M/LTM Semi-annual Groundwater Monitoring	Jun-17
OU-4B MCS Sites O&M/LTM	Jun-17
OU-4B LCS Monitoring	Sep-17
Destruction of Monitoring Well MPMW06S (in Hangar 1)	Jun-17
OU-3 Groundwater Monitoring (PFAS)	Jun-17

^{*} Schedule dependent on approval of final work plans, as applicable

^{**} Completion pending resolution of field conditions, current data and DQOs.